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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/589,448

08/11/2006

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EXAMINER

NGO, CHUONG D

ART UNIT

PAPER NUMBER

2193

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/589,448	<b>Applicant(s)</b> SIVTSOV ET AL.	
	<b>Examiner</b> Chuong D. Ngo	<b>Art Unit</b> 2193	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 11 August 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 21-50 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 21-50 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>8/11/06, 7/9/07 &amp; 7/19/07</u> . | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claims 21-50 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

As claims 21-33 and 40-50, the two-prong test recently set forth in *Ex parte Gutta*, 93 USPQ2d 1025, 1026-27 (BPAI 2009) is as follows:

(1) Is the claim limited to a tangible practical application, in which the mathematical algorithm is applied, that results in a real-world use (e.g., "not a mere field-of-use label having no significance")

(2) Is the claim limited so as to not encompass substantially all practical applications of the mathematical algorithm either "in all fields" of use of the algorithm or even in "only one field?"

If the machine (or article of manufacture) claim fails either prong of the two-part inquiry, then the claim is not directed to patent eligible subject matter.

Claims 21-33 and 40-50 are directed to apparatus that implement a mathematical algorithm. The claimed inventions merely perform calculations and manipulations of data but is not limited to tangible practical application that results in a real-world use or limited so as to not encompass substantially all practical applications of the mathematical algorithm either "in all

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fields" of use of the algorithm or even in "only one field". Therefore, claims 21-33 and 40-50 are not directed to patent eligible subject matter as failing both prongs of the two-prong test.

As per claims 34-39, for a claimed process to be patent-eligible under § 101, the claimed process must also (1) be tied to a particular machine or apparatus that impose meaningful limits on the claim's scope to impart patent-eligibility, or (2) transform a particular article into a different state or thing. (See *Diamond v. Diehr*, 450 U.S. 175, 184 (1981); *Parker v. Flook*, 437 U.S. 584, 588 n.9 (1978); *Gottschalk v. Benson*, 409 U.S. 63, 70 (1972); *Cochrane v. Deener*, 94 U.S. 780, 787-88 (1876), and in *Bilski*). However, it is clear from claims 34-39 that the claimed method is not tied to a particular machine or apparatus that imposes meaningful limits on the claim's scope. Further, the claimed process also does not transform a subject matter such as an article or material to a different state or thing. Therefore, the claims 34-39 fail to meet the machine-or transform test, and therefor is directed to a nonstatutory process.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 21-49 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Dao et al. (5,940,311).

As per claims 21 and 34, Dao et al. discloses a processor (figure 1) comprising: a first logic (70 of figure 6) to convert a first operand from a first format into a second format; and a second logic (figure 10) to combine a portion of the converted first operand with a portion of a second operand that is in the second format.

As per claims 22 and 35, Dao et al. discloses in figure 10 a third logic (82) to compare a first exponent corresponding to the first operand with a second exponent of the second operand.

As per claim 23, Dao et al. discloses in figure 10 a fourth logic (94) to modify a larger one of the first exponent or second exponent.

As per claims 24, 36, 40, 41 and 45, Dao et al. discloses in figure 10 a fourth logic (84) having a shifter to align the portion of the converted first operand and the portion of the second operand in accordance with the comparison. Dao et al also discloses in figure 1 a memory (38, 39, 16) to store data and a first logic (26) to fetch an opcode, a first operand, and a second operand from the memory.

As per claim 25, Dao et al. discloses the second logic to combine a plurality of single precision operands in a same path as a double precision exponent or a double-extended precision path (see abstract.)

As per claim 26, Dao et al. discloses a third logic (68 of figure 6) to convert the second operand from a third format into the second format.

As per claim 27, Dao et al. discloses in figure 10 the portion of the converted first operand or the portion of the second operand comprises a mantissa (MANTA, MANTB).

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As per claims 28,3 and 44, Dao et al. discloses second logic (figure 10) combining the portion of the converted first operand and the portion of the second operand by an addition operation or a subtraction operation.

As per claims 29,38 and 43, Dao et al. discloses in figure 10 a third logic (100) to normalize results of the combination by the second logic.

As per claims 30 and 39 Dao et al. discloses in figure 10 comprising a third logic (106) to round results of the combination by the second logic.

As per claims 31 and 46, Dao et al. disclose in col. 19, lines 1-9 inherent logic to analyze a portion of the converted first operand and the second operand to determine whether one of the first or second operands corresponds to a denormal operand.

As per claims 32, Dao et al. discloses in figure 1, one or more processor cores, wherein at least some of the one or more processor cores comprise one or more of the first logic or the second logic.

As per claim 47, Dao et al. discloses in figure 1 the memory comprising one or more of a level 1 cache (16)

As per claim 48, Dao et al. discloses in figure 1 a plurality of processor cores to access the data stored in the memory.

As per claims 33 and 49, Dao et al. discloses the plurality of processor cores and the first logic are on a same die. 33. Dao et al. discloses at least one of the one or more processor cores, the first logic, and the second logic are on a same die (see col. 1, lines 5-8).

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6. Claim 50 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dao et al. (5,940,311).

It is noted that Dao et al. does not specifically disclose the system further comprising an audio device. However, the claimed feature would have been an obvious field of use or application of the teaching of Dao et al in a system having an audio device as claimed.

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chuong D. Ngo whose telephone number is (571) 272-3731. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lewis, Jr. A. Bullock can be reached on (571) 272-3759. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

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like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Chuong D Ngo/  
Primary Examiner, Art Unit 2193

04/14/2010